REMARKS

Applicant has carefully studied the outstanding Office Action. The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Claims 1, 6 - 14, 17, 18, 20 and 27 - 35 stand rejected under 35 USC 102(b) as being anticipated by Korth. Claims 2 – 5 stand rejected under 35 USC 103(a) as being unpatentable over Korth in view of Baba, et al. Claims 15, 16 and 19 stand rejected under 35 USC 103(a) as being unpatentable over Korth in view of Carau. Claim 21 stands rejected under 35 USC 103(a) as being unpatentable over Korth. Claims 22 – 26 stand rejected under 35 USC 103(a) as being unpatentable over Korth in view of McPheters.

Applicant wishes to thank Examiner Tam D. Tran and Examiner Matthew Bella for the courtesy of an interview granted to the applicant and the Applicant's representative, Sanford T. Colb, on January 7, 2003. In the course of the interview, the claims were discussed vis-a-vis the prior art of record. At the interview, amended claims were proposed. The Interview Summary Record states as follows: "The attached proposed amended claims will be entered by the Examiner. The Examiner will update the search for amended claims 17-35 and new claims 37-52 which appear to distinguish from the art of record."

The Applicant was subsequently notified that the proposed amended claims were refused as not meeting the requirements of the Rules for an Amendment. The present response is intended to conform to the requirements of the Rules for an Amendment.

Claim 1 has been amended to recite "a position sensing device". Claim 13 has been rewritten in independent form and recites "an acoustic sensor". Claim 17 has been amended to recite "detecting light reflected from an object within a silhouette of said image" and "analyzing a reflection of said light to determine a spatial position of the object". These amendments were proposed at the interview and distinguish over the prior art of record.

Claims 10-12, 14 and 27 have been cancelled without prejudice.

New claims 36 and 37 are similar in scope to claim 28. New claim 38 is similar to claim 17 and incorporates the limitation of claim 33. Claims 39 and 40 are similar in scope to claims 36 and 37, and depend from claim 38 instead of claim 17. Claim 41 is similar to claim 1 but also includes the limitation of method claim 27. Dependent claims 42 - 49 are similar to dependent claims 2 - 9, and depend from claim 41 instead of claim 1. Claims 50 and 51 are similar to claims 39 and 40, and depend from claim 41 instead of claim 38.

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In view of the foregoing, independent claims 1, 13, 17, 38 and 41 are deemed allowable. Claims 2 - 9 and 15 - 16 depend directly or ultimately from claim 1 and recite additional patentable subject matter and therefore are also deemed patentable <u>a fortiori</u>. Claims 18 - 26 and 28 - 37 depend directly or ultimately from claim 17 and recite additional patentable subject matter and therefore are also deemed patentable <u>a fortiori</u>. Claims 39 - 40 depend directly or ultimately from claim 38 and recite additional patentable subject matter and therefore are also deemed patentable <u>a fortiori</u>. Claims 42 - 51 depend directly or ultimately from claim 41 and recite additional patentable subject matter and therefore are also deemed patentable <u>a fortiori</u>.

Applicant has carefully studied the remaining prior art of record herein and concludes that the invention as described and claimed in the present application is neither shown in nor suggested by the cited art.

In view of the foregoing remarks, all of the claims are believed to be in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Respectfully submitted,

Pillsbury Winthrop LLP
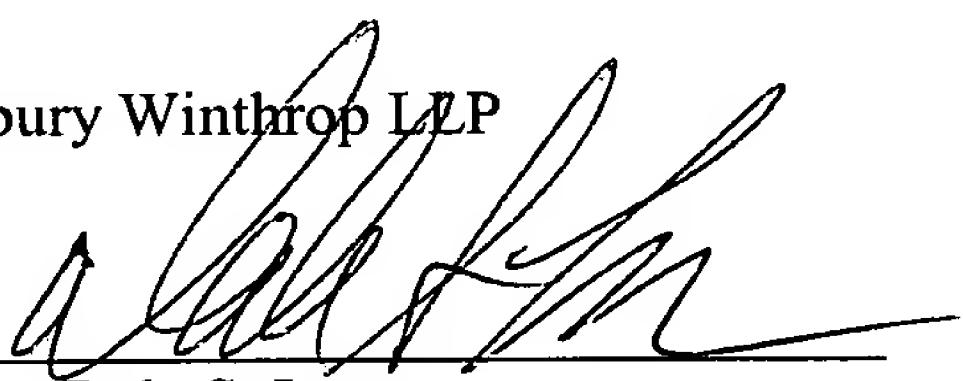
By: _____
    Dale S. Lazar
    Reg. No.: 28872
    Tel. No.: (703) 905-2126
    Fax No.: (703) 905-2500

DSL\sm
P.O. Box 10500
McLean, VA 22102
(703) 905-2000

Enclosure: Appendix

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (Amended) A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being a position sensing device (PSD); and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

2. (Unchanged) The device according to claim 1 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

3. (Unchanged) The device according to claim 2 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

4. (Unchanged) The device according to claim 3 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

5. (Unchanged) The device according to claim 2 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

6. (Unchanged) The device according to claim 1 wherein said data input device comprises a key of a keyboard.

7. (Unchanged) The device according to claim 1 wherein said data input device comprises a keyboard.

8. (Unchanged) The device according to claim 1 wherein said data input device comprises a mouse with at least one input button.

9. (Unchanged) The device according to claim 1 wherein said data input device comprises a key of a touch pad.

10. (Cancelled)

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11. (Cancelled)

12. (Cancelled)

13. (Amended) [The device according to claim 1 wherein said sensor comprises] A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being an acoustic sensor; and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

14. (Cancelled)

15. (Unchanged) The device according to claim 1 wherein said processor is in communication with an output device.

16. (Unchanged) The device according to claim 15 wherein said output device comprises at least one of a computer, a mobile telephone, a switch, and a palm-held computer/calculator.

17. (Amended) A method for data input comprising:

generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

performing an action on said at least one input zone;

sensing the action performed on said at least one input zone, said sensing comprising:

detecting light reflected from an object within a silhouette of said image; and

analyzing a reflection of said light to determine a spatial position of the object ;

generating signals in response to said action; and

processing said signals for performing an operation associated with said at least one input zone.

18. (Unchanged) The method according to claim 17 wherein the step of generating the optical image comprises generating an image of a keyboard and the step of performing an action comprises pressing keys of said image of said keyboard.

19. (Unchanged) The method according to claim 18 wherein the step of processing said signals causes typing alphanumeric characters on at least one of a computer, cell phone, palm-sized computer/calculator and PDA.

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20. (Unchanged) The method according to claim 18 and further comprising modifying said image of said keyboard so as to modify a configuration of keys of said keyboard.

21. (Unchanged) The method according to claim 18 and further comprising:

optically generating an image of characters of a first language on keys of said keyboard;

selecting a second language different from said first language; and

optically generating an image of characters of said second language on keys of said keyboard.

22. (Unchanged) The method according to claim 17 wherein said optical image of said data input device is a holographic image.

23. (Unchanged) The method according to claim 17 wherein said optical image of said data input device is generated by means of a monochromatic laser.

24. (Unchanged) The method according to claim 17 wherein said optical image of said data input device is generated by means of multiple laser sources having different colors and wavelengths.

25. (Unchanged) The method according to claim 17 wherein said optical image of said data input device is generated by means of a single laser source and using color and wavelength splitters to split light from said single laser source.

26. (Unchanged) The method according to claim 17 wherein said optical image of said data input device is generated by means of differently polarized light beams.

27. (Cancelled)

28. (Unchanged) The method according to claim 17 wherein the step of sensing comprises:

providing a light beam emanating from a light source;

detecting light reflected from an object within a silhouette of said image, corresponding to said light beam; and

analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object.

29. (Unchanged) The method according to claim 28 wherein said reference comprises an optically readable reference.

30. (Unchanged) The method according to claim 29 wherein said optically readable reference comprises a tangible bar code strip.

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31. (Unchanged) The method according to claim 29 wherein said optically readable reference comprises an optically generated bar code strip.

32. (Unchanged) The method according to claim 28 wherein said optical image of a data input device is generated by the same light beam whose reflection is used to determine the spatial position of the object.

33. (Unchanged) The method according to claim 17 wherein the step of sensing comprises:

providing a non-visible-light beam emanating from a non-visible light source;

detecting an image of said non-visible light impinging upon an object within a silhouette of said image of the data input device; and

analyzing said image of said non-visible light to determine a spatial position of the object.

34. (Unchanged) The method according to claim 33 wherein said non-visible light beam comprises an infrared beam and said image of said non-visible light comprises an infrared image of said object.

35. (Unchanged) The method according to claim 17 and further comprising detecting light reflected from an object within a silhouette of said image and preventing said image from impinging upon said object.

36. (New) A method according to claim 17 and wherein said sensing also comprises providing a light beam emanating from a light source.

37. (New) A method according to claim 36 and wherein said sensing also comprises analyzing an angle of said light beam to determine a spatial position of the object.

38. (New) A method for data input comprising:

generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

performing an action on said at least one input zone;

sensing the action performed on said at least one input zone, said sensing comprising:

providing a non-visible light beam emanating from a non-visible-light source;

detecting an image of said non-visible light impinging upon an object; and

analyzing said image of said non-visible light to determine a spatial position of the object;

generating signals in response to said action; and

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processing said signals for performing an operation associated with said at least one input zone.

39. (New) A method according to claim 38 and wherein said step of analyzing also comprises analyzing an angle of said light beam to determine a spatial position of the object.

40. (New) The method according to claim 38 wherein the step of analyzing also comprises analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object.

41. (New) A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being operative to:

detect light reflected from an object within a silhouette of said image; and

analyze a reflection of said light to determine a spatial position of the object; and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

42. (New) The device according to claim 41 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

43. (New) The device according to claim 42 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

44. (New) The device according to claim 43 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

45. (New) The device according to claim 42 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

46. (New) The device according to claim 41 wherein said data input device comprises a key of a keyboard.

47. (New) The device according to claim 41 wherein said data input device comprises a keyboard.

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48. (New) The device according to claim 41 wherein said data input device comprises a mouse with at least one input button.

49. (New) The device according to claim 41 wherein said data input device comprises a key of a touch pad.

50. (New) The device according to claim 41 and wherein said sensor analyzes an angle of said light to determine a spatial position of the object.

51. (New) The device according to claim 41 wherein said sensor analyzes an angle of said light and a time for said light to be reflected back from said object to a reference to determine a spatial position of the object.

End of Appendix

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